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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,580	06/04/2001	Harumitsu Fujita	P/2171-196	5456

2352 7590 06/05/2002

OSTROLENK FABER GERB & SOFFEN  
1180 AVENUE OF THE AMERICAS  
NEW YORK, NY 100368403

EXAMINER

TOLEDO, FERNANDO L

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

9m

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/873,580	FUJITA, HARUMITSU	
	Examiner	Art Unit	
	Fernando Toledo	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/021,519.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tigelaar et al. (U. S. patent 5,595,922) in view of Kuroda (U. S. patent 6,093,950).

In re claim 1; Tigelaar in the U. S. patent 5,595,922; figures 1 – 5 and related text, shows providing a semiconductor substrate 14 having several active regions of a first conductivity type (column 2); forming a gate oxide layer 18 having a first thickness onto the several active regions (figure 1); forming an electrode layer 20 onto the gate oxide layer (figure 1); patterning the electrode layer to form a gate electrode onto each of the several active regions (figure 2); oxidizing a sidewall of the gate electrode to form on the oxide layer a second thickness greater than the first thickness with the first gate oxide films, and gradually decrease from the sidewall of the gate electrode towards the centre portion thereof (figures 3 – 4); forming spacers on the sidewall of the gate electrode (figure 5, step 522).

Tigelaar does not disclose masking a portion of the several active regions and doping an unmasked portion of the several of active regions at a second concentration higher than the first concentration with an impurity of the second conductivity type to

Art Unit: 2823

form a second transistor driven at a second voltage level lower than the first voltage level.

However, Kuroda in the U. S. patent 6,093,950; figures 1 – 26 and related text; discloses masking a portion of the several of the active regions (figures 4 and 7) and doping an unmasked region of the several of active regions at a second concentration higher than the first concentration with an impurity of the second conductivity type to form a second transistor driven at a second voltage level lower than the first voltage level to adjust a threshold voltage without using additional resist (abstract).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to mask a portion of the several of the active regions and dope an unmasked region of the several of active regions at a second concentration higher than the first concentration with an impurity of the second conductivity type to form a second transistor driven at a second voltage level lower than the first voltage level, in Tigelaar, since, as taught by Kuroda, it will adjust a threshold voltage without using additional resist.

In re claim 2; Kuroda teaches wherein the doping step includes implanting ions of an impurity (figures 4 and 7).

In re claim 5; Tigelaar teaches wherein the step of forming the gate oxide layer, forms the gate oxide layer of the transistors driven at the first voltage and the transistors driven at the second voltage (figure 1).

In re claim 6; Tigelaar discloses wherein the gate electrode of transistors driven at the first voltage are doped at the first concentration and the gate electrode of

transistors driven at the second voltage are doped at the second concentration (column 2).

***Response to Arguments***

2. Applicant's arguments with respect to claims 1, 2, 5 and 6 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fernando Toledo whose telephone number is (703) 305-0567. The examiner can normally be reached on Monday – Friday, 8am – 4pm.

Art Unit: 2823

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

	Fernando Toledo Patent Examiner Art Unit 2823
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May 28, 2002

  
SUPERVISORY PRIMARY EXAMINER  
TECHNOLOGY CENTER 2000